

WHAT IS CLAIMED IS:

1. Internal combustion engine having an exhaust gas turbocharger and an exhaust gas recirculation device, whereby the internal combustion engine has a plurality of cylinders and each cylinder of the internal combustion engine has at least one intake valve and at least one outlet valve, and a compressor of the exhaust gas turbocharger is assigned to an inlet and an asymmetrical exhaust gas turbine of the exhaust gas turbocharger is assigned to an outlet of the internal combustion engine; the compressor is connected to the inlet via a charge air line; the exhaust gas turbine has two intake ports with different flow cross sections that are separated by a partition, each intake port being connected to the outlet through its own exhaust gas inlet line, whereby each exhaust gas inlet line is assigned a partial number of cylinders of the internal combustion engine, and an exhaust gas recirculation line leads from the exhaust gas inlet line of the intake port having the smaller flow cross section to the charge air line,

wherein the distribution of the recirculated exhaust among the individual cylinders of the internal combustion engine is different, whereby a partial number of the cylinders of the internal combustion engine receives all or most of the recirculated exhaust, and the remaining cylinders receive little or none of the recirculated exhaust.

2. Internal combustion engine as claimed in Claim 1, wherein the cylinders that do not supply the exhaust gas recirculation device receive all or most of the recirculated exhaust gas and the cylinders supplying the exhaust gas recirculation device receive little or none of the recirculated exhaust.

3. Internal combustion engine as claimed in Claim 1, wherein the internal combustion engine is designed in the form of an in-line engine with four or six cylinders, whereby a partial number of the cylinders that do not supply the exhaust gas recirculation device amounts to at least half of the total number of the cylinders of the internal combustion engine.

4. Internal combustion engine as claimed in claim 2, wherein the internal combustion engine is designed in the form of an in-line engine with four or six cylinders, whereby a partial number of the cylinders that do not supply the exhaust gas recirculation device amounts to at least half of the total number of the cylinders of the internal combustion engine.

5. Internal combustion engine as claimed in Claim 1, wherein an exhaust gas recirculation valve in the form of a throttle valve is provided in the exhaust gas recirculation line.

6. Internal combustion engine as claimed in Claim 2, wherein an exhaust gas recirculation valve in the form of a throttle valve is provided in the exhaust gas recirculation line.

7. Internal combustion engine as claimed in Claim 3, wherein an exhaust gas recirculation valve in the form of a throttle valve is provided in the exhaust gas recirculation line.

8. Internal combustion engine as claimed in Claim 4, wherein an exhaust gas recirculation valve in the form of a throttle valve is provided in the exhaust gas recirculation line.

9. Internal combustion engine as claimed in Claim 1, wherein the valve control times of the respective intake valves and/or the outlet valves of the individual cylinders of the internal combustion engine are different, whereby the cylinders that supply the exhaust gas recirculation device have shorter valve overlap times or none at all in comparison with the cylinders that supply the exhaust gas recirculation device.

10. Internal combustion engine as claimed in Claim 2, wherein the valve control times of the respective intake valves and/or the outlet valves of the individual cylinders of the internal combustion engine are different, whereby the cylinders that supply the exhaust

gas recirculation device have shorter valve overlap times or none at all in comparison with the cylinders that supply the exhaust gas recirculation device.

11. Internal combustion engine as claimed in Claim 3, wherein the valve control times of the respective intake valves and/or the outlet valves of the individual cylinders of the internal combustion engine are different, whereby the cylinders that supply the exhaust gas recirculation device have shorter valve overlap times or none at all in comparison with the cylinders that supply the exhaust gas recirculation device.

12. Internal combustion engine as claimed in Claim 4, wherein the valve control times of the respective intake valves and/or the outlet valves of the individual cylinders of the internal combustion engine are different, whereby the cylinders that supply the exhaust gas recirculation device have shorter valve overlap times or none at all in comparison with the cylinders that supply the exhaust gas recirculation device.

13. Internal combustion engine as claimed in Claim 5, wherein the valve control times of the respective intake valves and/or the outlet valves of the individual cylinders of the internal combustion engine are different, whereby the cylinders that supply the exhaust gas recirculation device have shorter valve overlap times or none at all in comparison with the cylinders that supply the exhaust gas recirculation device.

14. Internal combustion engine as claimed in Claim 6, wherein the valve control times of the respective intake valves and/or the outlet valves of the individual cylinders of the internal combustion engine are different, whereby the cylinders that supply the exhaust gas recirculation device have shorter valve overlap times or none at all in comparison with the cylinders that supply the exhaust gas recirculation device.

15. Internal combustion engine as claimed in Claim 7, wherein the valve control times of the respective intake valves and/or the outlet valves of the individual cylinders of the internal combustion engine are different, whereby the cylinders that supply the exhaust

gas recirculation device have shorter valve overlap times or none at all in comparison with the cylinders that supply the exhaust gas recirculation device.

16. Internal combustion engine as claimed in Claim 8, wherein the valve control times of the respective intake valves and/or the outlet valves of the individual cylinders of the internal combustion engine are different, whereby the cylinders that supply the exhaust gas recirculation device have shorter valve overlap times or none at all in comparison with the cylinders that supply the exhaust gas recirculation device.

17. Internal combustion engine as claimed in Claim 9, wherein the valve control times of the intake valves of the cylinders that supply the exhaust gas recirculation device are retarded.

18. Internal combustion engine as claimed in Claim 10, wherein the valve control times of the intake valves of the cylinders that supply the exhaust gas recirculation device are retarded.

19. Internal combustion engine as claimed in Claim 11, wherein the valve control times of the intake valves of the cylinders that supply the exhaust gas recirculation device are retarded.

20. Internal combustion engine as claimed in Claim 12, wherein the valve control times of the intake valves of the cylinders that supply the exhaust gas recirculation device are retarded.

21. Internal combustion engine as claimed in Claim 13, wherein the valve control times of the intake valves of the cylinders that supply the exhaust gas recirculation device are retarded.

22. Internal combustion engine as claimed in Claim 14, wherein the valve control times of the intake valves of the cylinders that supply the exhaust gas recirculation device are retarded.

23. Internal combustion engine as claimed in Claim 15, wherein the valve control times of the intake valves of the cylinders that supply the exhaust gas recirculation device are retarded.

24. Internal combustion engine as claimed in Claim 16, wherein the valve control times of the intake valves of the cylinders that supply the exhaust gas recirculation device are retarded.

25. Internal combustion engine as claimed in Claim 2, wherein the cylinders that do not supply the exhaust recirculation device receive between 70% and 100% of the exhaust recirculated via the exhaust gas recirculation device.

26. A method of operating an internal combustion engine having an exhaust gas turbocharger and an exhaust gas recirculation device, whereby the internal combustion engine has a plurality of cylinders and each cylinder of the internal combustion engine has at least one intake valve and at least one outlet valve, and a compressor of the exhaust gas turbocharger is assigned to an inlet and an asymmetrical exhaust gas turbine of the exhaust gas turbocharger is assigned to an outlet of the internal combustion engine; the compressor is connected to the inlet via a charge air line; the exhaust gas turbine has two intake ports with different flow cross sections that are separated by a partition, each intake port being connected to the outlet through its own exhaust gas inlet line, whereby each exhaust gas inlet line is assigned a partial number of cylinders of the internal combustion engine, and an exhaust gas recirculation line leads from the exhaust gas inlet line of the intake port having the smaller flow cross section to the charge air line, said method comprising:

controlling the distribution of the recirculated exhaust among the individual cylinders of the internal combustion engine is to be different, whereby a partial number of the cylinders of the internal combustion engine receives all or most of the recirculated exhaust, and the remaining cylinders receive little or none of the recirculated exhaust.

27. A method according to Claim 26, wherein the cylinders that do not supply the exhaust gas recirculation device receive all or most of the recirculated exhaust gas and the cylinders supplying the exhaust gas recirculation device receive little or none of the recirculated exhaust.

28. A method according to Claim 27, wherein the cylinders that do not supply the exhaust recirculation device receive between 70% and 100% of the exhaust recirculated via the exhaust gas recirculation device.

29. A method according to Claim 26, wherein the internal combustion engine is designed in the form of an in-line engine with four or six cylinders, whereby a partial number of the cylinders that do not supply the exhaust gas recirculation device amounts to at least half of the total number of the cylinders of the internal combustion engine.

30. A method according to Claim 26, wherein an exhaust gas recirculation valve in the form of a throttle valve is provided in the exhaust gas recirculation line.

31. A method according to Claim 26, wherein the valve control times of the intake valves and/or the outlet valves of the individual cylinders of the internal combustion engine are different, whereby the cylinders that supply the exhaust gas recirculation device have shorter valve overlap times or none at all in comparison with the cylinders that supply the exhaust gas recirculation device.

32. A method according to Claim 26, wherein the valve control times of the intake valves of the cylinders that supply the exhaust gas recirculation device are retarded.

33. A method according to Claim 32, wherein said control times are retarded up to 5° of crank angle.